

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

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April 4, 2012

04-CC-4-27.3/R29.0

04-1G9404

Project ID 0400021080

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN CONTRA COSTA COUNTY IN ANTIOCH FROM THE G STREET OVERCROSSING TO 0.1 MILE EAST OF HILLCREST AVENUE OVERCROSSING.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Wednesday, April 18, 2012.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, and the Bid book.

Project Plan Sheets 63, 168, 181, 183, 184, 221, 229, 230, 241, 242, 245 and 278 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheet 147A is added. A copy of the added sheet is attached for addition to the project plans.

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION, AND LIQUIDATED DAMAGES," subsection "INCENTIVES AND DISINCENTIVES," is revised as attached.

In the Special Provisions, Section 8-1.01, "STATE-FURNISHED MATERIALS," the following paragraph is added after the fourth paragraph:

"The City furnishes you with completely wired controller cabinet with auxiliary equipment including controller unit at the Contra Costa County Signal Shop, 2467 Waterbird Way, Martinez, CA 94553, (925) 313-7054. Contact the Contra Costa County Signal Shop at least 48 hours before you pick up the materials."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the sixth paragraph is revised as follows:

"The Contractor shall not proceed with any work in Stage 4B, 4C as shown on the Stage Construction Plans or any other work west of "E" 189+00 until August 1, 2013."

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In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the following paragraph is added after the seventh paragraph:

"Attention is directed to "Temporary Flow Diversion System" of these special provisions in regards to the use of the temporary flow diversion system being restricted to the period between June 1 and October 1."

In the Special Provisions, Section 10-1.22, "MAINTAINING TRAFFIC," the sixteenth and seventeenth paragraphs are deleted.

In the Special Provisions, Section 10-1.23, "CLOSURE REQUIREMENTS AND CONDITIONS," subsection "LATE REOPENING OF CLOSURES," the table is revised as follows:

Type of Facility	Route or Segment	Period	Damages/interval (\$)
Mainline	Route 4, EB & WB	1st half hour	\$1,500 / 10 minutes
		2nd half hour	\$2,300 / 10 minutes
		2nd hour and beyond	\$,000 / 10 minutes
Ramp	A Street/Lone Tree Way/Route 4 Interchange	1st half hour	\$1,000 / 10 minutes
		2nd half hour	\$1,000 / 10 minutes
		2nd hour and beyond	\$1,000 / 10 minutes
Ramp	Hillcrest Avenue/Route 4 Interchange	1st half hour	\$1,000 / 10 minutes
		2nd half hour	\$1,000 / 10 minutes
		2nd hour and beyond	\$1,000 / 10 minutes

In the Special Provisions, Section 10-1.34, "EXISTING HIGHWAY FACILITIES," subsection "ADJUST INLET," is deleted.

In the Special Provisions, Section 10-1.40, "MATERIAL CONTAINING HAZARDOUS WASTE CONCENTRATIONS OF AERIALY DEPOSITED LEAD," the third paragraph is revised as follows:

"Type Y-1 material contains aerially deposited lead in average concentrations (using the 90 percent Upper Confidence Limit) of 1.5 mg/L or less extractable lead (based on a modified waste extraction test using deionized water as the extractant) and 1411 mg/kg or less total lead. See plans for location of the Type Y-1 materials. This material shall be placed as shown on the plans, unless otherwise directed by the Engineer, and covered with a minimum 1 foot layer of nonhazardous soil or the pavement structural section. This material is hazardous waste regulated by the State of California that may be reused as permitted under the Variance of the California Department of Toxic Substances Control (DTSC) provided that the lead contaminated soil is placed a minimum of 5 feet above the maximum water table elevation and covered with at least one foot of nonhazardous soil. Temporary surplus material may be generated on this project due to the requirements of stage construction. Temporary surplus material shall not be transported outside the State right of way. In order to conform to the requirements of these provisions it may be necessary to stockpile material for subsequent stages, to construct some embankments out of stage, or to handle temporary surplus material more than once."

In the Special Provisions, Section 10-1.64, "CONCRETE STRUCTURES," is revised as attached.

In the Special Provisions, Section 10-1.65, "JACKING SUPERSTRUCTURE," is revised as attached.

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In the Special Provisions, Section 10-1.99, "CITY SANITARY SEWER SYSTEM," subsection "MATERIALS," the fifth paragraph is revised as follows:

"Backfill material for sewer mains and laterals must be 3/4-inch Class 2 aggregate base that meets the requirements as specified in Section 26 "Aggregate Bases," of the Standard Specifications."

In the Special Provisions, Section 10-3.13, "MODEL 334 CONTROLLER CABINETS," is deleted.

In the Special Provisions, Section 10-3.26, "RELOCATE WIRELESS VEHICLE DETECTOR SYSTEM (WVDS)," the fifth paragraph is revised as follows:

"The above price will be firm for orders placed on or before August 31, 2012, provided delivery is accepted within 90 days after the order is placed."

In the Bid book, in the "Bid Item List," Items 61, 64 and 157 are revised as attached.

To Bid book holders:

Replace pages 6 and 10 of the "Bid Item List" in the Bid book with the attached revised pages 6 and 10 of the Bid Item List. The revised Bid Item List is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This addendum and attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-1G9404

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,



REBECCA D. HARNAGEL
Chief, Office of Plans, Specifications & Estimates
Office Engineer
Division of Engineering Services

Attachments

INCENTIVES AND DISINCENTIVES

Incentive payments and disincentive deductions apply to the completion of the work specified in the Incentive / Disincentive table.

Comply with "Maintaining Traffic" and "Closure Requirements and Conditions" of these special provisions.

Incentive payments and disincentive deductions are independent of liquidated damages and damages specified in "Closure Requirements and Conditions" of these special provisions.

Complete the work specified within the time specified in the Incentive / Disincentive table starting on the day specified. If you complete the work within the specified time, you will receive the incentive shown for each day less than the time specified. If you do not complete the work within the specified time, the Department will deduct the disincentive shown for each day needed to complete the work.

The working days for the work described in the Incentive / Disincentive table is defined below:

working day: Time measure unit for work progress. A working day is any day except:

1. Saturdays and holidays
2. A day when you cannot perform work on the controlling activity for at least 50 percent of the day with at least 50 percent of the normal labor and equipment due to any of the following:
 - 2.1. Maintaining traffic under the contract
 - 2.2. The Engineer's direction to suspend the controlling activities for reasons unrelated to your performance
 - 2.3. An unanticipated event not caused by either party such as:
 - 2.3.1. Act of God (Pub Cont Code § 7105)
 - 2.3.2. Act of a public enemy
 - 2.3.3. Epidemic
 - 2.3.4. Fire
 - 2.3.5. Flood
 - 2.3.6. Governor-declared state of emergency
 - 2.3.7. Landslide
 - 2.3.8. Quarantine restriction
 - 2.4. An issue involving a third-party, including:
 - 2.4.1. Industry or area-wide labor strike
 - 2.4.2. Material shortage
 - 2.4.3. Freight embargo
 - 2.4.4. Jurisdictional requirement of a law enforcement agency
 - 2.4.5. Workforce labor dispute of a utility or non-highway facility owner resulting in a utility or non-highway facility reconstruction not described and not solely for the Contractor's convenience

Incentive / Disincentive

Work	Time of Completion of Work (Working Days)	Incentive Payment per Day	Disincentive Deduction per Day
Complete all work in Stages 1, 2, and 3 as shown on the Stage Construction Plans	160	\$2,400	\$8,500
Complete all work in Stages 4A, 4B, 4C, and 4D as shown on the Stage Construction Plans	440	\$2,400	\$8,500

The working days for the work not described in the above Incentive / Disincentive table shall conform to the provisions in Section 8-1.06, "Time of Completion," of the Standard Specifications.

Total incentive payment will not exceed \$33,600.

Total disincentive deduction will not exceed \$476,000.

Actions required by the Engineer to perform normal inspection and testing duties will not be considered as contributing to any delay in awarding incentives or to any delay that will require charging disincentives.

Full compensation for any additional costs incurred by compliance with the provisions in this section is included in the prices paid for the various contract items of work and no additional compensation will be allowed.

CONTRACT NO. 04-1G9404
REVISED PER ADDENDUM NO. 2 DATED APRIL 4, 2012

10-1.64 CONCRETE STRUCTURES

Portland cement concrete structures shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

GENERAL

Guard posts for Roosevelt Lane Pedestrian Undercrossing (Br. No. 28-0396) must comply with Section 75-1.02 "Miscellaneous Iron and Steel" of the Standard Specifications.

Concrete surfaces inside the walls and roof of Roosevelt Lane Pedestrian Undercrossing (Br. No. 28-0396) must be prepared and painted in conformance with "Prepare and Paint Concrete Surfaces," of section "Architectural Treatment (Textured Concrete)," of these special provisions.

Shotcrete shall not be used as an alternative construction method for reinforced concrete members unless otherwise specified.

Neoprene strip shall be furnished and installed at abutment backwall joint protection in conformance with the details shown on the plans, the provisions in the Standard Specifications, and these special provisions.

Furnishing and installing neoprene strip shall conform to the requirements for strip waterstops as provided in Section 51-1.145, "Strip Waterstops," of the Standard Specifications, except that the protective board will not be required.

Forms used to support the deck of cast-in-place box girders or to form the voids of precast members for the following structures may remain in place, provided the portions of the forms that obstruct access openings or conflict with utility facilities are removed, the forming system employed leaves no sharp projections into the cells or voids, and forms between hinges and 5 feet beyond access openings adjacent to hinges are removed:

"A" Street Undercrossing.

Plastic pipe located at vertical drains used behind retaining walls, including horizontal or sloping drains down slopes and across sidewalk areas, shall be polyvinyl chloride (PVC) plastic pipe, Schedule 80, conforming to the provisions for pipe for edge drains and edge drain outlets in Section 68-3.02, "Materials," of the Standard Specifications. The vertical drain pipe shall be rigidly supported in place during backfilling operations.

Vertical, horizontal, radial, or normal dimensions shown on the Typical Section in the plans are for zero percent cross slope. At the Contractor's option, the Typical Section of superelevated concrete box girder structures with (1) sloping exterior girders, (2) a straight uninterrupted cross slope between edges of deck, and (3) a single profile grade line, may be rotated around the profile grade line in superelevation areas. The horizontal distances between the profile grade line and the edges of deck shall remain unchanged. The planned girder widths and slab thicknesses shall remain unchanged and the interior girder stems shall remain vertical at the planned locations.

FALSEWORK

Falsework shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

In addition to the provisions in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications, the time to be provided for the Engineer's review of the working drawings for specific structures, or portions thereof, shall be as follows:

Structure or Portion of Structure	Total Review Time - Weeks
"A" Street Undercrossing	4
Cavallo Road Undercrossing	4
"A" Street Underpass	3
Cavallo Road Underpass	3

Temporary crash cushion modules, as shown on the plans and conforming to the provisions in "Temporary Crash Cushion Module" of these special provisions, shall be installed at the approach end of temporary railings which are located less than 15 feet from the edge of a traffic lane. For 2-way traffic openings, temporary crash cushion modules shall be installed at the departing end of temporary railings which are located less than 6 feet from the edge of a traffic lane.

The Contractor's engineer who signs the falsework drawings shall also certify in writing that the falsework is constructed in conformance with the approved drawings and the contract specifications prior to placing concrete. This certification shall include performing any testing necessary to verify the ability of the falsework members to sustain the stresses required by the falsework design. The engineer who signs the drawings may designate a representative to perform this certification. Where falsework contains openings for railroads, vehicular traffic, or pedestrians, the designated representative shall be qualified to perform this work, shall have at least 3 years of combined experience in falsework design or supervising falsework construction, and shall be registered as a Civil Engineer in the State of California. For other falsework, the designated representative shall be qualified to perform this work and shall have at least 3 years of combined experience in falsework design or supervising falsework construction. The Contractor shall certify the experience of the designated representative in writing and provide supporting documentation demonstrating the required experience if requested by the Engineer.

Welding and Nondestructive Testing

Welding of steel members, except for previously welded splices and except for when fillet welds are used where load demands are less than or equal to 1,000 pounds per inch for each 1/8 inch of fillet weld, shall conform to AWS D1.1 or other recognized welding standard. The welding standard to be utilized shall be specified by the Contractor on the working drawings. Previously welded splices for falsework members are defined as splices made prior to the member being shipped to the project site.

Splices made by field welding of steel beams at the project site shall undergo nondestructive testing (NDT). At the option of the Contractor, either ultrasonic testing (UT) or radiographic testing (RT) shall be used as the method of NDT for each field weld and any repair made to a previously welded splice in a steel beam. Testing shall be performed at locations selected by the Contractor. The length of a splice weld where NDT is to be performed, shall be a cumulative weld length equal to 25 percent of the original splice weld length. The cover pass shall be ground smooth at the locations to be tested. The acceptance criteria shall conform to the requirements of AWS D1.1, Section 6, for cyclically loaded nontubular connections subject to tensile stress. If repairs are required in a portion of the weld, additional NDT shall be performed on the repaired sections. The NDT method chosen shall be used for an entire splice evaluation including any required repairs.

For all field welded splices, the Contractor shall furnish to the Engineer a letter of certification which certifies that all welding and NDT, including visual inspection, are in conformance with the specifications and the welding standard shown on the approved working drawings. This letter of certification shall be signed by an engineer who is registered as a Civil Engineer in the State of California and shall be provided prior to placing any concrete for which the falsework is being erected to support.

For previously welded splices, the Contractor shall determine and perform all necessary testing and inspection required to certify the ability of the falsework members to sustain the stresses required by the falsework design. This welding certification shall (1) itemize the testing and inspection methods used, (2) include the tracking and identifying documents for previously welded members, (3) be signed by an engineer who is registered as a Civil Engineer in the State of California, (4) and shall be provided prior to erecting the members.

COST REDUCTION INCENTIVE PROPOSALS FOR CAST-IN-PLACE PRESTRESSED BOX GIRDER BRIDGES

Except as provided herein, cast-in-place prestressed box girder bridges shall be constructed in conformance with the details shown on the plans and the provisions in Section 50, "Prestressing Concrete," and Section 51, "Concrete Structures," of the Standard Specifications.

If the Contractor submits cost reduction incentive proposals for cast-in-place prestressed box girder bridges, the proposals shall be in conformance with the provisions in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications and these special provisions.

The Engineer may reject any proposal which, in the Engineer's judgment, may not produce a structure which is at least equivalent to the planned structure.

At the time the cost reduction incentive proposal (CRIP) is submitted to the Engineer, the Contractor shall also submit 4 sets of the proposed revisions to the contract plans, design calculations, and calculations from an independent checker for all changes involved in the proposal, including revisions in camber, predicted deck profile at each construction stage, and falsework requirements to the Offices of Structure Design, Documents Unit, P.O. Box 942874, Sacramento, CA 94274-0001 (1801 30th Street, Sacramento, CA 95816), telephone (916) 227-8230. When notified in writing by the Engineer, the Contractor shall submit 12 sets of the CRIP plan revisions and calculations to the Offices of Structure Design for final approval and use during construction. The calculations shall verify that all requirements are satisfied. The CRIP plans and calculations shall be signed by an engineer who is registered as a Civil Engineer in the State of California.

The CRIP plans shall be either 11" x 17", or 22" x 34" in size. Each CRIP plan sheet and calculation sheet shall include the State assigned designations for the contract number, bridge number, full name of the structure as shown on the contract plans, and District-County-Route-Post Mile. Each CRIP plan sheet shall be numbered in the lower right hand corner and shall contain a blank space in the upper right hand corner for future contract sheet numbers.

Within 3 weeks after final approval of the CRIP plan sheets, one set of the corrected good quality prints on 20-pound (minimum) bond paper, 22" x 34" in size, of all CRIP plan sheets prepared by the Contractor for each CRIP shall be furnished to the Offices of Structure Design, Documents Unit.

Each CRIP shall be submitted prior to completion of 25 percent of the contract working days and sufficiently in advance of the start of the work that is proposed to be revised by the CRIP to allow time for review by the Engineer and correction by the Contractor of the CRIP plans and calculations without delaying the work. The Contractor shall allow a minimum of 6 weeks for the review of a CRIP. In the event that several CRIPs are submitted simultaneously, or an additional CRIP is submitted for review before the review of a previously submitted CRIP has been completed, the Contractor shall designate the sequence in which the CRIPs are to be reviewed. In this event, the time to be provided for the review of any proposal in the sequence shall be not less than the review time specified herein for that proposal, plus 2 weeks for each CRIP of higher priority which is still under review.

Should the review not be complete by the date specified in the Contractor's CRIP, or such other date as the Engineer and Contractor may subsequently have agreed to in writing and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in review of CRIP plans and calculations, an extension of time commensurate with the delay in completion of the work thus caused will be granted as provided in Section 8-1.07, "Liquidated Damages," of the Standard Specifications except that the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications shall not apply.

Permits and approvals required of the State have been obtained for the structures shown on the plans. Proposals which result in a deviation in configuration may require new permits or approvals. The Contractor shall be responsible for obtaining the new permits and approvals before the Engineer will reach a decision on the proposal. Delays in obtaining permits and approvals will not be reason for granting an extension of contract time.

All proposed modifications shall be designed in conformance with the bridge design specifications and procedures currently employed by the Department. The proposal shall include all related, dependent or incidental changes to the structure and other work affected by the proposal. The proposal will be considered only when all aspects of the design changes are included for the entire structure. Changes, such as but not limited to, additional reinforcement and changes in location of reinforcement, necessary to implement the CRIP after approval by the Engineer, shall be made at the Contractor's expense.

Modifications may be proposed in (1) the thickness of girder stems and deck slabs, (2) the number of girders, (3) the deck overhang dimensions as specified herein, (4) the amount and location of reinforcing steel, (5) the amount and location of prestressing force in the superstructure, and (6) the number of hinges, except that the number of hinges shall not be increased. The strength of the concrete used may be increased but the strength employed for design or analysis shall not exceed 6,000 psi.

Modifications proposed to the minimum amount of prestressing force which must be provided by full length draped tendons are subject to the provisions in "Prestressing Concrete" of these special provisions.

No modifications will be permitted in (1) the foundation type, (2) the span lengths or (3) the exterior dimensions of columns or bridge superstructure, except that the overhang dimension from face of exterior girder to the outside edge of roadway deck may be uniformly increased or decreased by 25 percent on each side of the box girder section. Fixed connections at the tops and bottoms of columns shown on the plans shall not be eliminated.

The Contractor shall be responsible for determining construction camber and obtaining the final profile grade as shown on the plans.

The Contractor shall reimburse the State for the actual cost of investigating CRIPs for cast-in-place prestressed box girder bridges submitted by the Contractor. The Department will deduct this cost from any moneys due, or that may become due the Contractor under the contract, regardless of whether or not the proposal is approved or rejected.

DECK CLOSURE POURS

Where a deck closure pour is shown on the plans, reinforcement protruding into the closure space and forms for the closure pour shall conform to the following:

- A. During the time of placement of concrete in the deck, other than for the closure pour itself, reinforcing steel which protrudes into the closure space shall be completely free from any connection to the reinforcing steel, concrete, or other attachments of the adjacent structure, including forms. The reinforcing steel shall remain free of any connection for a period of not less than 24 hours following completion of the pour.
- B. Forms for the closure pour shall be supported from the superstructure on both sides of the closure space.

SLIDING BEARINGS

Sliding bearings consisting of elastomeric bearing pads lubricated with grease and covered with sheet metal shall conform to the following requirements:

- A. Grease shall conform to the requirements of Society of Automotive Engineers AS 8660. A uniform film of grease shall be applied to the upper surface of the pads prior to placing the sheet metal.
- B. Sheet metal shall be commercial quality galvanized sheet steel. The sheet metal shall be smooth and free of kinks, bends, or burrs.
- C. Construction methods and procedures shall prevent grout or concrete seepage into the sliding bearing assembly.

ELASTOMERIC BEARING PADS

Elastomeric bearing pads shall conform to the provisions in Section 51-1.12H, "Elastomeric Bearing Pads," of the Standard Specifications, except that elastomeric bearing pads for the Cavallo Road underpass and "A" Street underpass shall conform to the details shown on the plans and to the requirements of Chapter 15, Part 10 and Part 11, of the AREMA Manual for Railway Engineering.

CURING

The formed surfaces which will be exposed in the completed work, of the columns, caps, piers, bents, or abutments listed in the following table shall be cured by the forms-in-place method. Other surfaces of said units shall be cured in conformance with the provisions in Section 90-7.03, "Curing Structures," of the Standard Specifications.

Bridge Name & Number	Abutment Number	Pier or Bent Number
"A" Street Undercrossing (Br. No. 28-0401 R/L)		2
"A" Street Underpass (Br. No. 28C0487)		2

MEASUREMENT AND PAYMENT

Measurement and payment for concrete in structures shall conform to the provisions in Section 51-1.22, "Measurement," and Section 51-1.23, "Payment," of the Standard Specifications and these special provisions.

Concrete for the sign structure support at retaining walls shall be measured and paid for as structural concrete, retaining wall.

Full compensation for furnishing and installing guard posts at Roosevelt Lane Pedestrian Undercrossing (Br. No. 28-0396), shall be considered as included in the contract price paid per cubic yard for structural concrete, box culvert and no separate payment will be made therefor.

Full compensation for preparing and painting the walls and roof inside Roosevelt Lane Pedestrian Undercrossing (Br. No. 28-0396), shall be considered as included in the contract price paid per cubic yard for structural concrete, box culvert and no separate payment will be made therefor.

Full compensation for furnishing and installing plastic pipe located at vertical drains used behind retaining walls, including horizontal drains across sidewalk areas, including excavation and backfill involved in placing the plastic pipe, shall be considered as included in the contract price paid per cubic yard for the various items of concrete work involved and no separate payment will be made therefor.

10-1.65 JACKING SUPERSTRUCTURE

GENERAL

Summary

Jacking superstructure consists of lowering the superstructure of the Cavallo Road Undercrossing (Replacement) (Bridge No. 28-0402R) as shown on the plans and in conformance with the requirements in these special provisions.

The Contractor must design, furnish, construct, monitor, maintain, and remove the temporary supports for the superstructure and determine the methods and equipment for lowering the superstructure in conformance with the requirements in these special provisions.

Jacking support systems includes temporary supports, jacking assemblies and appurtenant items necessary to jack and support the structures. Jacking assemblies or support system may be founded on soil or the abutment footings, with the Engineer's written approval.

Comply with sections "Maintaining Traffic" of these special provisions.

Approval by the Engineer of the jacking system working drawings or jacking system inspection performed by the Engineer will in no way relieve the Contractor of full responsibility for the temporary supports, jacking assemblies, or lowering operations.

Submittals

The Contractor must submit to the Engineer working drawings and design calculations for the jacking support system, including any temporary supports and jacking assemblies. Such drawings and design calculations must be signed by an engineer who is registered as a Civil Engineer in the State of California. The working drawings and design calculations must conform to the requirements in Section 5-1.02 "Plans and Working Drawings," of the Standard Specifications. The number of sets of drawings and design calculations and times for review must be the same as specified for falsework working drawings in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications.

The time to be provided for the Engineer's review of the working drawings for specific structures, or portions thereof, must be as follows:

Structure or Portion of Structure	Review Time - Weeks
Cavallo Road Undercrossing (Replacement) (Bridge No. 28-0402R)	5 weeks

The jacking support system working drawings must include the following:

1. Descriptions and values of all loads, including construction equipment loads.
2. Descriptions of equipment to be used.
3. Details and calculations for jacking and supporting the structure.
4. Stress sheets, anchor bolt layouts, shop details, and erection and removal plans including methods and sequences of erection and removal for the temporary supports.
5. Assumed soil bearing values and design stresses for support footings, including anticipated foundation settlement. Load test must be performed to verify the assumed soil bearing values.
6. Details for bracing required during erection and removal (transverse and longitudinal directions) including stability of all or any portions of the structures during all stages of erection and removal operations.
7. Details of the displacement monitoring system, including equipment, location of control points, and methods and schedule of taking measurements.
8. Details for jacking the structure if settlement occurs.
9. If structural composite lumber is proposed for use, the working drawings must clearly identify the structural composite lumber members by grade (E value), species, and type. The Contractor must provide technical data from the manufacturer showing the tabulated working stress values of the composite lumber. The Contractor must furnish a certificate of compliance as specified in Section 6-1.07, "Certificates of Compliance," for each delivery of structural composite lumber to the project site.
10. Details for the jacking loads that are applied simultaneously to prevent distortion and excessive stresses that would damage the structure.

The design calculations must show a summary of computed stresses in the jacking support system and the connections between the support system and the bridge superstructure. Computed stresses must include the effect of the jacking sequence. The calculations must include a lateral stiffness assessment of the jacking support system.

Design Criteria

The jacking support system must resist the structure dead load and lateral design forces shown, plus any additional loads from jacking equipment and activities. If the jacking support stiffness exceeds the specified minimum stiffness, increase the lateral design forces to be compatible with the jacking support lateral stiffness.

Systems involving modifications to the bridge that impair the structural integrity, intended serviceability, or design capacity of the bridge are not allowed.

When footing type foundations are to be used, the Contractor must determine the bearing value of the soil.

If falsework loads are imposed on the jacking support system, the jacking system must comply with the deflection criteria described in Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections," of the Standard Specifications.

If falsework loads are imposed on jacking support systems, the jacking support system must be designed to support the additional loads caused by the prestressing forces.

Bracing shall be provided, as necessary, to withstand all imposed loads during erection and removal of any temporary supports or jacking assemblies. The working drawings shall show provisions for such temporary bracing or methods to be used to conform to these requirements during each phase of erection and removal of the jacking system. Wind loads shall be included in the design of such bracing or methods. Wind loads shall conform to the applicable provisions in Section 51-1.06A(1), "Design Loads," of the Standard Specifications.

Manufactured Assemblies

Manufactured assemblies must comply with the provisions in Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections," of the Standard Specifications and these special provisions.

Quality Control and Assurance

Each jack must be equipped with either a pressure gage or a load cell for determining the jacking force. Pressure gages must have an accurately reading dial at least 6 inches in diameter. Each jack must be calibrated by a private laboratory approved by the Transportation Laboratory within 6 months prior to use and after each repair. Each jack and its gage must be calibrated as a unit with the cylinder extension in the approximate position that it will be at final jacking force and must be accompanied by a certified calibration chart. Load cells must be calibrated and provided with an indicator by which the jacking force is determined.

Vandal-resistant displacement monitoring equipment must be provided and maintained. Vertical and horizontal displacements of the temporary supports and the existing structure must be monitored continuously during jacking operations. As a minimum, elevations must be taken prior to the start of jacking operations, immediately after jacking is complete, and after the temporary supports have been removed. As a minimum, the existing structure must be monitored at the abutments, bent and at mid span of both adjoining spans. Control points at each location must be located near the center and at both edges of the superstructure. The records of vertical and horizontal displacement must be signed by an engineer who is registered as a Civil Engineer in the State of California and available to the Engineer at the jobsite during normal working hours.

CONSTRUCTION

Attention is directed to paragraphs 1 through 7 of Section 51-1.06B, "Falsework Construction," of the Standard Specifications. All reference to falsework in these paragraphs must also apply to the jacking support system.

The jacking support system must comply with "Welding and Nondestructive Testing," of the Section entitled "Concrete Structures", of these special provisions

A redundant system of supports must be provided during the entire jacking operation for backup should any of the jacks fail. The redundant system must include stacks of steel plates added as necessary to maintain the redundant supports at each jack location within 1/4 inch of the jacking sill or corbels.

A redundant system of supports must be provided during the entire jacking operation for backup should the superstructure move horizontally. The redundant system must include structural components as necessary to control the horizontal movements of the superstructure.

If the jacking support systems are supported on the permanent structure, they must not induce permanent forces into the completed structure or produce cracking.

Before starting jacking operations, an engineer for the Contractor who is registered as a Civil Engineer in the State of California shall inspect the jacking support system, for conformance with the approved working drawings. The Contractor's Registered Engineer must certify in writing that the jacking support system, conform to the approved working drawings, and that the material and workmanship are satisfactory for the purpose intended. A copy of this certification must be available at the site of the work at all times.

The Contractor's Registered Engineer must be present at the bridge site at all times when load is being transferred to or from the jacking support system components and when jacking operations or adjustments are in progress. If an unplanned event occurs, the Contractor's Registered Engineer must submit immediately to the Engineer for approval, the procedure or proposed operation to correct or remedy the event.

The Contractor must perform an initial survey as part of the displacement monitoring system to record the location of the structure before the jacking operations. Two copies of the survey must be signed by the Contractor's Registered Engineer, and submitted to the Engineer.

Vertical and horizontal displacements of the jacking support system, including permanent abutments used to support jacking system components and the superstructure, must be monitored continuously during jacking operations. As a minimum, elevations must be taken before and after load transfers to or from jacking system components, before the start of jacking operations, immediately after jacking is complete, before and after superstructure loads are transferred to bearing areas, and after the jacking system has been removed. As a minimum, structure must be monitored at the abutments, the bent and at mid span of both adjoining spans. Control points at each location must be located near the center and at both edges of the superstructure. The records of vertical and horizontal displacement must be signed by the Contractor's Registered Engineer and delivered to the Engineer at the completion of lowering operations.

A force equal to the initial jacking load or the dead load shown on the plans must be applied to the structure by the temporary support system and held until all initial compression and settlement of the system is completed before bridge falsework removal at the location being supported is begun.

Jacking operations must be carefully controlled and monitored to ensure that the jacking loads are applied simultaneously to prevent distortion and excessive stresses that would damage the structure. The superstructure must be jacked as necessary to maintain the relative vertical displacements of control points to less than 1/4 inch or as directed by the Engineer.

The superstructure must be lowered to the position shown on the plans so that the load is distributed uniformly across each abutment. Galvanized shims must be placed as approved by the Engineer, when required to provide uniform loading at bearing pads.

Should unanticipated displacements, cracking or other damage occur, the construction must be discontinued until corrective measures satisfactory to the Engineer are performed. Damage to the structure as a result of the Contractor's operations must be repaired by the Contractor in conformance with the provisions in Section 7-1.11, "Preservation of Property," of the Standard Specifications.

The removal operation of the jacking support system shall be conducted in such a manner that any portion not yet removed remains in a stable condition at all times.

Attention is directed to Section 51-1.06C, "Removing Falsework," of the Standard Specifications. All references to falsework in this section must also apply to temporary supports.

After lowering the superstructure, attachments to the structure for the jacking operations must be removed and the concrete surfaces must be finished in conformance with the provisions in Section 51-1.18, "Surface finishes," of the Standard Specifications.

PAYMENT

The contract lump sum price paid for jacking superstructure includes full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in designing, constructing, maintaining, and removing the temporary supports, including jacking the superstructure and monitoring displacements, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

BID ITEM LIST
04-1G9404

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	022559	REMOVE CULVERT (ASBESTOS CEMENT PIPE)	LF	1,560		
62	022560	REMOVE WATER METER	EA	3		
63	022561	REMOVE BACK FLOW PREVENTOR	EA	2		
64	150820	REMOVE INLET	EA	38		
65	150823	REMOVE DOWNDRAIN	EA	4		
66	150824	REMOVE SEWER MANHOLE	EA	3		
67	150826	REMOVE MANHOLE	EA	1		
68	150829	REMOVE RETAINING WALL	LF	450		
69	022562	REMOVE MASONRY WALL	LF	930		
70	150841	REMOVE SEWER PIPE	LF	610		
71	150847	REMOVE CONCRETE PAVEMENT AND BASE	SQYD	35,100		
72	022563	REMOVE ASPHALT CONCRETE SIDEWALK	SQFT	12,600		
73	150859	REMOVE ASPHALT CONCRETE OVERSIDE DRAIN	EA	1		
74	152320	RESET ROADSIDE SIGN	EA	6		
75	152391	RELOCATE ROADSIDE SIGN (METAL POST)	EA	9		
76	152392	RELOCATE ROADSIDE SIGN (WOOD POST)	EA	18		
77	152393	RELOCATE ROADSIDE SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	5		
78	152410	RELOCATE WATER METER	EA	4		
79	022564	ADJUST MANHOLE FRAME AND COVER TO GRADE	EA	4		
80	022565	ADJUST WATER VALVE BOX TO GRADE	EA	13		

BID ITEM LIST

04-1G9404

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141	490603	24" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	7,555		
142	490605	36" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	1,188		
143	490616	84" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	626		
144	498016	16" CAST-IN-DRILLED-HOLE CONCRETE PILING (SOUND WALL)	LF	9,320		
145	498022	24" CAST-IN-DRILLED-HOLE CONCRETE PILING (SOUND WALL)	LF	50		
146	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
147	500060	TIEDOWN ANCHOR	EA	85		
148 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	CY	760		
149 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	CY	5,330		
150 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	CY	12,442		
151 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	CY	659		
152 (F)	043608	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EBART)	CY	112		
153 (F)	510090	STRUCTURAL CONCRETE, BOX CULVERT	CY	201		
154 (F)	043609	STRUCTURAL CONCRETE (JUNCTION STRUCTURE)	CY	78		
155 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	350		
156	510524	MINOR CONCRETE (SOUND WALL)	CY	240		
157	510526	MINOR CONCRETE (BACKFILL)	CY	51		
158 (F)	043610	ARCHITECTURAL TEXTURE	SQFT	96,856		
159	516000	JACKING SUPERSTRUCTURE	LS	LUMP SUM	LUMP SUM	
160 (F)	043611	SOUND WALL (RETAINING WALL) (MASONRY BLOCK)	SQFT	11,997		